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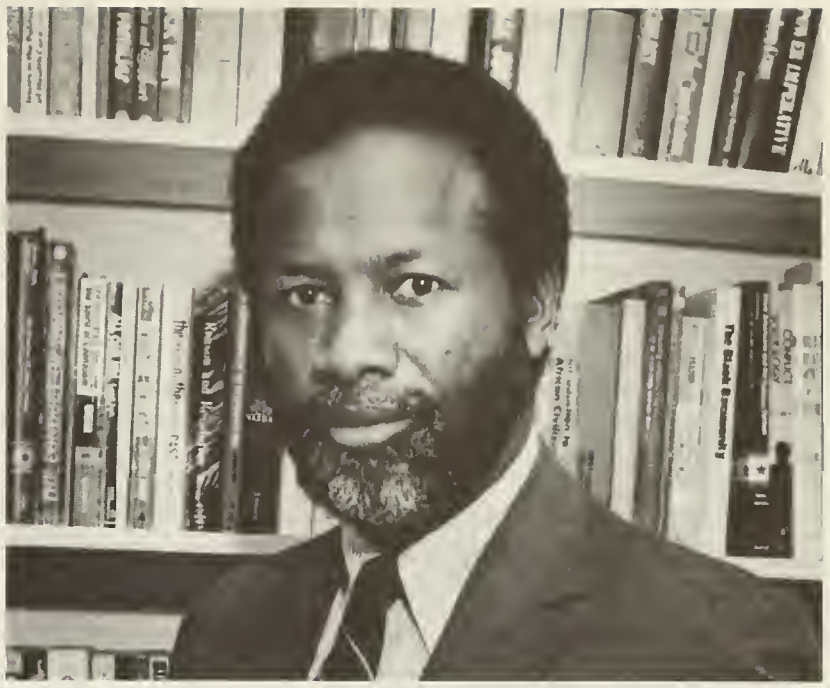
Commentary

The Lead Poisoning Epidemic

by
Wornie L. Reed



It is more dangerous than some forms of cancer—yet it is virtually ignored by the American public.

It has seriously afflicted a much higher segment of the population than some diseases that were called "epidemics"—yet it has received little public attention.

What we have here is a public failure, a failure to recognize that this disease—lead poisoning—is a serious threat to our health. It has already permanently damaged tens of thousands of babies, children and adults in this nation. And the list of victims is still growing.[1]

Lead, present in paint, dust and soil, is possibly our most important toxic waste problem in terms of the seriousness and the extent of human health effects. More is known about lead than almost any other toxic substance. Millions of dollars have been spent to clean up hazardous waste sites involving toxic substances whose health effects are still controversial; yet lead, a toxic substance with confirmed and permanent health effects on extremely large numbers of children, has not been targeted for aggressive cleanup action. The question is whether allowing chronic and preventable poisoning of children will continue to be an acceptable health and environmental policy.

Lead poisoning is a serious but *preventable* childhood disease. It is caused by exposure to lead found primarily in paint, soil and household dust. Children come in contact with these sources of lead during normal indoor and outdoor play. A child can be poisoned from a very high dose of lead or from small amounts of lead ingested over time. Lead can cause damage to the brain, nervous system and kidneys; it can also affect the building of red blood cells. Even low levels of lead can result in physical coordination, learning or behavior problems.

Most children who are lead poisoned *show no signs of being sick.* But even though they seem well, lead can still be harming them. Lead is especially dangerous to children under six years of age, because this is an important time in their growth and development.

Since some principal sources of lead in the environment are flaking paint from old houses, auto emissions and industrial sources, old inner city areas are the primary places for lead poisoning. It is not surprising then that blacks have excess amounts of lead poisoning, as they are the primary inner city dwellers. Data from the late 1970s show that black children are more than six times as likely as white children (12.2% to 2%) to have elevated levels of lead in their blood. In Boston children nine months to six years old living in 28 discrete areas in predominantly black neighborhoods have nearly 30% of Boston's childhood lead poisoning; yet they constitute only 4.4% of the children in this age group. About one out of every four children in each of these areas has been poisoned.[2]

Since lead is clearly an important toxic waste, the Health Department of the City of Boston appealed to the Environmental Protection Agency (EPA) for funds to remove lead-contaminated soil in the highest risk areas of Boston. The Health Department also solicited Senator Edward Kennedy's assistance. He responded by sponsoring legislation to provide an additional $45 million (in the reauthorization of the EPA Superfund Program) to initiate lead-contaminated soil removal in up to three major cities. Three cities—Boston, Baltimore and Cincinnati—requested funds for lead cleanup efforts; however, the EPA and the Reagan administration persuaded Congress to limit the appropriation to a total of $15 million for pilot programs in these three cities.

Since the EPA Superfund only addresses exterior pollution problems, the pilot programs are directed at soil removal from sites with high concentrations of lead. The federal government is requiring that the pilot programs prove that the removal of the soil makes a difference. This requirement appears to be reasonable until it is examined in the context of the EPA's other Superfund work. In other EPA Superfund projects, there is no such requirement to dem-

onstrate a positive effect following the removal of toxins. The rule is to remove hazardous material if it exists. Furthermore, if there is an imminent threat to humanity, the hazardous material must be removed within a year. All of this is done whether or not there is any evidence of exposure or whether there is any consistently strong evidence of human health effects. For example, there is currently a $45 million Superfund project in Holbrook, Massachusetts, to remove contaminants that have no comparable immediate impact on human health. Yet the Boston City Health Department could not get adequate funds to remove lead—a proven contaminant—from the most contaminated residential areas in Boston. In fact, $45 million would cleanup *all* of the highest risk areas of Boston. And to aggravate matters, the Boston pilot project is being held up ostensibly as a result of the failure of the EPA and the Commonwealth of Massachusetts to agree on the method of evaluating the pilot project and their failure to provide the necessary level of funding to implement it.

Racial discrimination affects the life chances of blacks—especially the more critical aspects of health and safety. It would seem that the manner in which lead poisoning is being handled in Boston provides an example of the real meaning of racism. Young black children are being poisoned by lead every day in known lead-contaminated areas, yet no major cleanup efforts are underway!

(For more on lead poisoning, see the article below.)

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Lead Poisoning: A Health Epidemic in the Black Community

by
Wornie L. Reed

Lead poisoning in humans has been identified as a cause of high blood pressure, heart disease, birth defects, complications in pregnancies and developmental problems in infants. It is a health problem of epidemic dimensions in the black community. This serious health problem is yet another example of the production of "illth" in the modern society. As the means of production create wealth for some sectors of society, they also create illth. As Lamont C. Cole wrote in 1970:[1]

> At the present time refuse produced in this country is estimated to be increasing about four percent per year; . . . about the same as the yearly increase in the Gross National Product.

It is apparent that lead in the environment can be considered as undesirable refuse. Just as the health and wealth of society accrue to some groups more than others, so does the illth. The black community—as usual—gets a disproportionate share of the latter. And undoubtedly, the fact that this health hazard is centered in the black community is the reason more is not done to eliminate and prevent it. Society shows little concern for those who are the most likely victims of lead poisoning—small black children from poor and minority families living in old housing in dilapidated inner city areas. In affluent and middle-class suburbs only 3% of white children have dangerous levels of lead in their blood, compared to 30% of inner city black children.

Background[a]

As a result of industrialization, lead is ubiquitous in the human environment. Having no known physiologic value, lead can only produce harm. Children are particularly susceptible to its toxic effect. Excessive absorption of lead is one of the more prevalent and preventable childhood health problems in the United States today.

Since 1970 medical opinion regarding lead tolerance has changed substantially. Before the mid-1960s a level below 60 micrograms of lead per deciliter (ug/dl) of whole blood was not considered dangerous enough to require intervention.[2] By 1975, as a result of more experience with this phenomenon, the level at which intervention is suggested declined 50%—to 30 ug/dl.[3] In that year the Center (now Centers) for Disease Control (CDC) published the study, *Increased Lead Absorption and Lead Poisoning in Young Children: A Statement by the Center for Disease Control.* Since then new evidence has indicated that lead is toxic at levels previously thought to be nontoxic. Now the elevated blood level at which intervention is recommended is 25 ug/dl or greater.

Furthermore, it is now generally recognized that lead toxicity is a widespread problem—one that is neither unique to inner city children nor limited to one area of the country.

Progress has been made. Average blood levels for the U.S. population have been established by the Second National Health and Nutrition Examination Survey (NHANES II), and lead-contaminated soil and dust have emerged as important contributors to blood lead levels, as has leaded gasoline through its contribution to soil and dust lead levels. An increasing body of data supports the view that lead, even at levels previously thought to be "safe," is toxic to the developing central nervous system, and screening programs have revealed the extent of lead poisoning in target populations.

Obviously, a major public health objective would be the *prevention* of lead poisoning. A major advance in primary prevention has been the reduction of lead in gasoline. It is probably responsible for the findings of reduced average blood lead levels in children nationwide[4] and in two major cities.[5] In addition, lead is no longer allowed in paint for residential dwellings, furniture and toys.

The primary sources of lead are air, water and food. Despite the 1977 ruling by the Consumer Product Safety Commission, which limits the lead content of newly applied residential paints, millions of housing units still contain previously applied leaded paints. Older houses that are dilapidated or that are being renovated are a particular danger to children. In many urban areas lead is found in soil[6] and house dust.[7] Consequently, screening programs—a form of secondary prevention—are still needed to minimize the chance of lead poisoning developing among susceptible young children.

A nationwide survey, conducted from 1976 to 1980, showed that children from all geographic areas and socioeconomic groups are at risk of lead poisoning.[8] Data from that survey indicate that nearly 3.9% of all U.S. children under the age of five years had blood lead levels of 30 ug/dl or more. Extrapolating this figure, an estimated 675,000 children six months to five years of age had blood lead levels of 30 ug/dl or more. There are, however, race and class differences in lead poisoning. Two percent of white children had elevated blood lead levels; 12.2% of black children had elevated levels. The levels for some black children are even higher: among black children living in the cores of large cities and in families with annual incomes of less than $6,000, the prevalence of levels of 30 ug/dl or more was 18.6%. Among white children, those in lower as opposed to higher income families had eight times the prevalence of elevated lead levels.

In the past decade, knowledge of lead toxicity and its effects increased substantially. Previously, medical attention focused on the effects of severe exposure to lead and clinically recognizable signs and symptoms of toxicity. It is now apparent that lower levels of exposure may cause serious behavioral and biochemical changes. Results of a growing number of studies indicate that chronic exposure to low levels of lead is associated with altered neurophysiological performance; the young child is particularly vulnerable to this effect.[9]

Many factors can affect the absorption, distribution and toxicity of lead, factors that tend to put children more at risk than adults. Children are more exposed to lead than older persons because their normal hand-to-mouth activities introduce many nonfood items into their bodies.[10] Once absorbed, lead is distributed throughout soft tissue and bone. Young children absorb and retain more lead on a unit-mass basis than adults. Their bodies also handle lead differently: higher mineral turnover in bone means that more lead is available to sensitive systems in children. Since lead accumulates in the body and is only removed slowly, repeated exposures to small amounts over many months produce elevated blood lead levels. In fact, this is the most probable means of acquiring lead poisoning from soil and dust.

Children are particularly susceptible to [lead's] toxic effect. Excessive absorption of lead is one of the most prevalent and preventable childhood health problems in the United States.

Lead toxicity is mainly evident in the red blood cells, the central and peripheral nervous systems and the kidneys. Lead also has adverse effects on reproduction in both males and females,[11] and recent data[12] suggest that prenatal exposure to low levels of lead may be related to minor congenital abnormalities. In fact, the margin of safety for lead is very small compared with other chemical agents.[13]

The effects of lead toxicity are nonspecific and not readily identifiable. Any number of behavioral and biochemical changes may result. Parents, teachers and clinicians may identify altered behaviors in children that result from lead toxicity as attention disorders, learning disabilities or emotional disturbances. Because of the large number of children susceptible to lead poisoning, these adverse effects are a major cause for concern.

Some of the symptoms of lead toxicity are fatigue, pallor, malaise, loss of appetite, irritability, sleep disturbance, sudden behavioral change and developmental regression. More serious symptoms include clumsiness, muscular irregularities (ataxia), weakness, abdominal pain, persistent vomiting, constipation and changes in consciousness due to early encephalopathy (disease of the brain). Children who

display these symptoms need thorough diagnostic evaluations, and, should the disease be confirmed, they need prompt treatment.

Lead Poisoning as a Child Health Problem[b]

Lead poisoning among children has changed over the past decade. Previously, it was a disease often presented as encephalopathy associated with children ingesting peeling old lead paint. Now lead poisoning has become a largely "asymptomatic" condition, characterized by an elevated blood lead level linked with many sources of exposure and affecting a broader range of children.

The most severe effects of lead (acute encephalopathy, seizures, coma and death) occur at blood lead levels 80 to 100 ug/dl and over. However, even moderately elevated blood lead levels (as low as 25 ug/dl) have effects on central nervous system functions. These less obvious effects occur in such central nervous system functions as intelligence, behavior control, fine motor coordination, neurological dysfunction and motor impairment. Further, metabolic effects occur in children with blood lead concentration as low as 10 to 15 ug/dl. Recent studies strongly suggest that, at even subclinical levels of lead intoxication, children sustain permanent cognitive and behavioral damage that manifests itself in poor school performance and a variety of learning disabilities.

Subclinical lead intoxication is especially troublesome because it is asymptomatic. Parents find it difficult to understand lead hazards when their children do not appear to be "sick"; long-term exposure is cumulative over time so that toxicity occurs without the parents' recognition. Probably the most significant implications of lead's distribution in the body are its high degree of accumulation with repeated exposure and its slow rate of removal after exposure occurs.

Sources Of Lead Exposure

Children may be exposed to lead from a wide variety of sources—tap water, canned food, air and paint. All children in the United States are exposed to lead in the air, in soil and dust and even in the normal diet. While lead may come from such sources as water from piping and water distribution systems and from lead leaching from the seams of soldered cans, probably the most critical sources are lead-based paint, airborne lead and soil and dust.

Lead-Based Paint

Direct ingestion of lead paint—the most concentrated source of lead—is most often the cause of high risk symptomatic or asymptomatic lead poisoning. Lead-based paint is the major source of high-dose lead exposure and symptomatic lead poisoning for children in the United States. The interiors of about 27 million households in this country are contaminated by lead paint that was produced before the amount of lead in residential paint was controlled. Since 1977, household paint must contain no more than 0.06% lead. However, before 1977, some interior paints contained in excess of 50% lead. And a further complicating factor is that lead-based paint is still available for industrial, military and marine usage. Occasionally, this paint is used in homes.

Quite often lead poisoning occurs in children under six years of age who live in deteriorated housing built before World War II. Children in this age group often mouth and/or swallow peeling paint chips. This practice of pica, the ingestion of nonfood substances, is normal behavior for young children. It is not race or class based. However, poor families and black families are the principal occupants of such housing. Therefore, children in these families have more adverse health effects from normal childhood behavior. In recent years this kind of lead poisoning has been reported among "urban homesteaders" who are moving back into the cities and rehabiliting old houses.

Two percent of white children had elevated blood levels; 12.2% of black children had elevated levels.

Airborne Lead

Inhalation of airborne lead is also a means of poisoning children. Although inhalation is a minor means, airborne lead that gets deposited in soil and dust is a major source of lead poisoning. This airborne lead is produced by automotive and industrial sources. Studies have shown that children living within 100 feet of major roadways have higher blood levels than those living farther away.[14] Low income families and black families tend more than others to live near such major roadways.

Soil and Dust

Soil and dust that contain lead are also extremely important sources of lead exposure for children. Lead in soil and dust comes from particles of airborne lead produced by automotive, industrial and similar sources. Flaking lead paint also plays a part in contaminating the soil around homes. The potential health effects of lead in dust and dirt are increased by their absorptive properties and by their ubiquitous presence in children's environments. In particular, hand-to-mouth transfer of lead-contaminated dust and dirt enters a child's system through normal play.[15] This activity often produces subclinical chronic lead intoxication, which constitutes over 90% of all childhood lead poisoning cases.

Prevention

Current childhood lead poisoning prevention programs have a case finding and treatment focus. These programs were established in the late 1960s and early 1970s, when the accepted threshold levels for toxic effects of lead were much higher than today. It was believed that if lead levels did not reach these thresholds, the children would not suffer any serious or permanent health effects. At that time the emphasis was on screening children for lead poisoning, providing medical treatment and removing the sources of lead (i.e., lead paint). This approach was based on the assumption that with early detection and intervention lead encephalopathy and the resultant brain damage would be prevented. The early detection and intervention would keep children's lead levels from becoming too high. This approach was successful insofar as many of the more severe consequences of lead poisoning—death and mental retardation—were reduced. On the other hand, the lower levels of lead continued to cause serious, but asymptomatic, health effects. Now it is known that screening and medical and environmental treatment—important secondary prevention methods—do not provide primary prevention.

Recent studies strongly suggest that, at even subclinical levels of lead intoxication, children sustain permanent cognitive and behavioral damage that manifests itself in poor school performance and a variety of learning disabilities.

All children diagnosed as having lead poisoning require continual medical treatment, environmental assessment and educational monitoring. Obviously, lead-poisoned children must be treated. It should be noted that medical treatment, which is essential, is painful for the child and distressing for the family. But the failure to treat a child subjects that child to permanent damage. Environmental evaluation and deleading are necessary prior to returning an already poisoned child to the home environment. The child should also be carefully monitored and evaluated by the educational system, as the effects of lead poisoning on the central nervous system may cause such problems as attention disorders, learning disabilities and emotional disturbances.

Substantial preventable costs result from continual neglect of primary prevention. Treating already poisoned children is a costly way of dealing with the problem. Primary prevention of lead poisoning would protect children *before* they are poisoned; however, the problem continues to be dealt with only after children are lead poisoned.

The Race Effect

Boston provides an example of how blacks are affected disproportionately by lead poisoning. Lead poisoning, while occurring throughout this city, is to a surprising degree concentrated within very limited geographic areas. Four neighborhoods—Dorchester, Roxbury, Jamaica Plain and Mattapan—rate highest in the number and percentage of children poisoned. These neighborhoods account for 87% of the City's lead-poisoned children and only 56% of the at-risk population (nine months to six years of age). Further, 16 of the census tracts in these neighborhoods—containing less than 18% of the City's at-risk children—account for 41% of Boston's lead-poisoned children. These neighborhoods contain a major portion of the black population of Boston. Although blacks make up only 20% of the population of the City of Boston, they are 78% of Roxbury, 81% of Mattapan and over 20% of Dorchester.

Conclusion

The Boston Childhood Lead Poisoning Prevention Program oversees the abatement of lead paint hazards and monitors the blood lead levels of young children throughout the City. The deleading of poisoned children's homes appears to contribute significantly to the reduction of their blood lead levels. However, even six to 12 months after deleading, about 50% of the children tested still had lead levels over 30 ug/dl (59% of those originally with levels over 50 ug/dl and 46% of those initially under 50 ug/dl).

Clearly then, for many children, lead-based paint is not the only significant source of lead. Because lead-contaminated soil has been found to be a major contributor to elevated lead levels in children, it is quite likely that for many of the children whose lead levels do not steadily decline to safe levels, soil is a significant source of lead exposure. The pattern of sustained toxicity almost certainly undermines cognitive and central nervous system development in these children. Consequently, there is a pressing need to remove lead contaminated soil and to do so in a preventive manner.

As stated by Ronald Jones, the Director of the Office of Environmental Affairs:

> As long as we rely solely on education, screening and treatment programs, and reject active preventive measures, even in highly lead-contaminated environments that guarantee high rates of lead poisoning, we embrace a policy that stamps this violence to our children as acceptable public policy.

The Special Commission on Lead Poisoning Prevention for the Commonwealth of Massachusetts has made a number of recommendations for improving the prevention of lead poisoning. Perhaps the two most important are:

1. The addition of inspections and, where appropriate, removal of leaded soil, and
2. The initiation of a program of primary prevention in geographic areas with extremely high rates of lead poisoning.

To accomplish these objectives, Jones's office identified 28 "hot spots" in Boston and worked with others in a long fight to get the EPA Superfund money to remove lead-contaminated soil from the City's hot spots. Obviously, a lot hinges on this path-breaking demonstration project. There is every reason to believe that a correctly executed cleanup of this toxic substance will serve to reduce the lead poisoning of children in these neighborhoods.

NOTES

[a]This section is taken substantially from the Center for Disease Control. (1985, January). *Preventing Lead Poisoning in Young Children.* Atlanta: U.S. Department of Health, Education and Welfare.

[b]This section is taken substantially from Office of Environmental Affairs. (1985). *Boston Child Lead Poisoning: Request for Immediate Cleanup of Lead-Contaminated Soil in Emergency Areas.* Boston: Department of Health and Hospitals.

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Racial Insularity at the Core: Contemporary American Racial Attitudes

by
A. Wade Smith

Author's note: Special appreciation goes to Tom Smith and the National Opinion Research Center for providing the data for this study.

Survey research scientists have been interested in American racial attitudes ever since the craft has achieved a reasonable degree of precision. White attitudes toward blacks constitute the longest running topic in survey research. However, as a result of dramatic and systematic changes in racial attitudes and because of the changing nature of race relations per se, there may be less agreement now about the structure of American racial values than at any time since World War II.[a] This paper will provide a capsule presentation of the major findings of recent research on racial attitudes and a brief summary of the current controversies.

The first thing that becomes apparent to any investigator is that there is no longer any such thing as a classic "liberal" or archetypal "conservative." In the past these labels characterized a coherent set of beliefs, attitudes, and values, and, armed with knowledge of a given person's opinion on one racial issue, one could be reasonably sure of his/her view on another. This is no longer the case. Since World War II the issues in race relations have changed in two ways. There have been changes in the issues themselves (and thus changes in the importance attached to different attitudes) and in the ascriptive characteristics (i.e., background variables) associated with "progressive" or "repressive" outlooks on racial matters.

As a result of changes in laws and advances in basic science, many of the concerns previously of interest to scholars of racial attitudes have been made moot. During the late 1940s and 1950s surveys typically asked whites whether they approved of various types of desegregation[b] (e.g. public facilities, public transportation) and called upon respondents to make assessments of the intelligence, trustworthiness, etc., of blacks vis-a-vis whites.[1] After the successes of the Civil Rights Movement, and after federal legislation had removed barriers to racial interaction, whites came to accept the new reality in such overwhelming proportions that survey researchers soon dropped desegregation questions because there were so few intolerant responses. Similarly, questions involving racial comparisons of intelligence or character all but disappeared by the 1960s.[2] It will be shown below that the issues on the other side of this fundamental transformation of the American social fabric bear little resemblance to these earlier concerns.

The second dramatic change in American racial attitudes is the erosion of regional differences in those attitudes. Despite the anger, horror, and shock generated by the Civil Rights Movement, by the late 1970s considerable lessening of the differences between southern and nonsouthern racial attitudes was the norm.[3] Just as Myrdal[4] had predicted, whites in the South and the North were gradually coming to think alike on racial matters. One of the reasons for this emerging "national outlook" on racial matters was that the Civil Rights Movement expanded beyond the South, encompassing the entire nation. For another, the racial violence of the late 1960s and early 1970s mainly occurred outside of the South. Together, these developments dispelled any misconception northern whites held of race relations as "a southern problem."

Current investigations of racial attitudes show that there is very little "carryover" effect from one's views on one topic to one's views on another. Some scholars have coined the term "symbolic racism" to explain how an individual might hold relatively enlightened and progressive racial attitudes as a matter of principle, yet disapprove of the policy alternatives proposed to bring about racial equality.[5] Moreover, there is disagreement as to whether "symbolic racists" want merely to avoid what they see as the economic consequence of racial equality, or whether

they reject the concept entirely but shrink from voicing such sentiments in the current racial climate. But neither symbolic racism nor its permutations would predict, as shown below, that whites have a continued resistance to interracial contacts that has no real policy implications.

Table 1

General Racial Attitudes and Experiences of Interracial Contacts, 1963–1986.[a]

Survey Year	Percent of Nonblack Respondents[b]			
	Approving of Black Dinner Guests	Entertained Black Dinner Guests	Blacks Live in the Neighborhood	Attend Church with Blacks
1963	50.0	---	---	---
1966	51.6	---	20.5	---
1970	63.0	---	29.0	---
1972	69.8[c]	---	28.6	---
1973	68.2	19.9	29.9[c]	---
1974	72.0	22.5	31.2[c]	---
1975	---[d]	---	32.9	---
1976	70.5	22.8	42.4	---
1977	71.1	23.2	39.4	---
1978	---	---	45.5	34.5
1980	74.3	26.2	42.9	41.9
1982	77.2	27.5	44.4	---
1983	---	---	43.5	35.7
1984	79.8	27.2	47.0	44.9
1985	77.4	27.8	44.1	---
1986	---	---	44.0	36.4

[a]All surveys conducted by the American Institute of Public Opinion (Gallup) or the National Opinion Research Center (NORC). All sampling errors ⩽ 5%. See text for actual question wordings.

[b]Over 96.2% of all nonblack respondents are white.

[c]This is the mean response from two or more surveys that asked this question in this year.

[d]The dashed line indicates that this issue did not appear in any survey during this particular year.

Limits of Racial Contact

While no racial barriers exist that limit access to public facilities and accommodation, public transportation, etc., there is little truly *voluntary* contact between blacks and whites. To test this assertion, all that is needed are white people's responses to survey queries as to the actual amount of voluntary interracial contact they experience.

Because schools and work places are under (often ineffectual) legal compulsions to desegregate, they may bring whites into contact with blacks involuntarily. But there are two spheres of life over which those who do not live in group situations have complete control.[c] Table 1 depicts the social distance whites maintain from blacks in two areas: entertaining dinner guests and attending church. Since 1963, although irregularly, both the American Institute of Public Opinion (the Gallup organization) and the National Opinion Research Center (NORC) have asked four racial social-distance questions:

> How strongly would you object if a member of your family wanted to bring a black friend home to dinner? Would you object strongly, mildly, or not at all?
>
> During the last few years, has anyone in your home brought a friend who was black home for dinner?
>
> Are there any blacks living in this neighborhood now?
>
> Do blacks attend the church that you, yourself, attend most often, or not?

Since some of the earlier surveys only asked these questions of whites, the results reported exclude those blacks that were asked a slightly different question in the later years.[d] In every survey at least 96.2% of the nonblacks were white. In any year, if more than one survey fielded the question, a weighted average of the results was calculated.

The increase of those in favor of such social contact is from exactly half of the white population in 1963 to more than three-fourths by the mid-1980s. While the overwhelming numbers of whites approve of having blacks in their home, about a fifth still do not. But all the more striking is the relatively small proportion of whites who have actually had black dinner guests. Little more than a quarter of the white population has actually experienced such racial contact. So while many whites give "lip-service" approval to total voluntary, interracial interaction, comparatively few actually engage in such activities.

Moreover, it is not the case that many whites lack contact with blacks to whom they could extend dinner invitations. In addition to the contacts in the schools and work places mentioned above, Table 1 shows that a substantial plurality of whites respond that blacks live in their neighborhoods. In analyses not shown the overwhelming majority of those respondents report that their black neighbors live relatively close to them (i.e., on their block to less than three blocks away). Yet in some surveys less than half who report that they have black neighbors say that they have entertained black dinner guests. As first reported by Hyman and Sheatsley,[6] the South and the non-South are converging in the social distance at which they hold blacks. By the 1980s there are no significant regional differences on any of the above figures.

Another potential source of social interaction between blacks and whites is the church. In the five recent surveys where the issue appears, more than a third of the white respondents report that blacks attend their church. This is significantly more than the percent who have entertained black dinner guests. To be sure, there have been increases in positive interracial attitudes about social contact and (to a lesser extent) increases in black penetration of white neighborhoods and churches. But the data here sug-

gest that the increases in the social and spacial proximity of blacks and whites have not resulted in increased social interaction. See Table 2.

Table 2

Trends in Attitudes Toward Interracial Marriages, 1963–1985.[a]

Survey Year	Percent of Nonblack Respondents[b] Not Favoring Laws Against Interracial Marriages
1963	37.5
1964	53.2
1968	53.5
1970	47.7
1972	60.1
1973	62.1
1974	65.5
1976	71.6
1977	71.7
1980	67.3
1982	67.1
1984	71.0
1985	70.3

[a]All surveys conducted by the American Institute of Public Opinion (Gallup) or the National Opinion Research Center (NORC). All sampling errors ⩽ 5 %. See text for actual question wordings.

[b]Over 96.2% of all nonblack respondents are white.

In our society marriage is the relationship having the least social distance and the most intense contact. The choice of a spouse is also unquestionably beyond the scope of regulation. Table 2 reports the percent of nonblack respondents who oppose laws against interracial marriages. While those not opposing such marriages have almost doubled since 1963, still almost a third of all whites would have the state impose racial limits on individuals' decisions as to whom they can marry. Since interracial marriages extract no cost from anyone other than those in wedlock, not even group conflict motives (a broader definition of symbolic racism) can explain such opposition.

. . . there is no longer any such thing as a classic "liberal" or archetypal "conservative."

Contexts of Tolerance and Limits of Racial Attitude Change

In the face of the continuing evolution of racial attitudes on issues not made obsolete by changes in public policy, what is there to account for the apparent irregularities in contemporary racial attitudes? At face value whites seem to adhere to the principles of racial equality and interaction. But whenever the contexts of such interaction are specified, opposition is raised. What is needed is an explanation for the continuing resistance of whites to interracial contact that also takes into account their increase in tolerance.

Table 3

Attitudes of Nonblacks Toward Varying Degrees of School Desegregation, 1958–1986.[a]

Survey Year	Percent in Favor of Attending Schools With: A Few Black Students	50% Black Students	> 50% Black Students
1958[b]	74.2	48.5	31.6
1959	79.6	52.8	29.7
1963	77.8	48.4	26.7
1965[c]	83.2	57.9	31.7
1966	87.5	57.3	32.4
1969	88.4	61.8	34.6
1970[c]	91.0	68.4	35.4
1972	94.0	74.7	44.8
1973	91.8	64.4	31.0
1974	95.7	66.9	33.4
1975[c]	94.1	68.1	36.0
1977	92.8	73.5	35.8
1978[c]	93.8	69.0	36.3
1980	94.2	71.6	38.4
1982	95.8	79.4	45.5
1983	96.5	74.9	35.1
1985	95.7	77.6	40.2
1986	96.2	76.4	36.3

[a]Over 96.2% of all nonblack respondents are white. Includes only those respondents living in a home with school-aged children.

[b]All surveys conducted by the American Institute of Public Opinion (Gallup) or the National Opinion Research Center (NORC). All sampling errors ⩽ 5 %.

[c]These issues appeared in two Gallup surveys in both 1965 and 1970 and in one Gallup and one NORC survey in both 1975 and 1978. The percentages above are the mean results from both surveys in those years.

A look at post-World War II changes in attitudes toward varying degrees of school desegregation shows that between 1958 and 1986 almost all whites came to accept the presence of a few blacks in school with their children.[e] See Table 3. But note that if the question is posed in the 50% range, tolerance drops approximately 20%. When the question is asked about schools in which blacks are the majority, as many as half of those tolerant of half-black schools become intolerant. Further, while there have been increases in tolerance of a few blacks and of half-black schools over time, there is relatively little improvement in white attitudes toward majority black schools.

The lessons learned above in the analyses of racial contact will serve well here. In schools with a few blacks the likelihood of any one white child interacting with a black child is extremely low. But, all other things being equal, in half-black schools this likelihood of interracial interaction theoretically increases to 50% and in majority black schools to above 50%. As long as the intensity of the interracial experience is quite low, whites seem willing to participate. But as this intensity increases, the acceptability of the situation decreases. The racial attitudes of

whites, then, are proportional to the amount of interaction structured by the potential interracial context. Remember, the desegregation of public accommodations, transportation, etc., can be accepted because the intensity of contact is low, lower say than the intensity of contact in interracial dining.

This "group position approach," first postulated by Blumer,[7] was empirically validated in time-series analyses of attitudes toward interracial housing[8] and toward school desegregation.[9] But more than simply linking differences in tolerance to differences in intensity of racial contact, this approach also accounts for changes in attitudes over time (where they occur). While the largest component of racial attitude change involves simultaneous change across all subgroups of whites, a substantial component of the incremental increase in tolerance over time stems from cohort replacement. Further, decreases in intolerance among whites accrue as a result of increased education over time.[10]

Findings thus far lead to the conclusion that not much racial attitude change should be expected in the near future. All of the big (and easy) changes have been incorporated into public policy. Partially as a result, there is little interest in white attitudes regarding these moot issues. With the possible exception of school desegregation, those areas of racial contact remaining are beyond the regulation of law as well as free from the influence of economic institutions. In short, the amount of interracial personal contact any white experiences is the result of a series of extremely personal decisions. Given the data presented above, it seems as though most whites will not extend themselves.

> *. . . an individual might hold relatively enlightened and progressive racial attitudes as a matter of principle, yet disapprove of the policy alternatives proposed to bring about racial equality.*

Public Policy Versus Racial Privacy

It appears that just as whites do not seem to be extending themselves toward blacks, they also do not want blacks to intrude into their lives. Both Gallup and NORC have surveyed nonblacks on their attitudes regarding the intrusion of blacks into their world. These were four of the questions:

Which statement comes closest to how you, yourself, feel:

Blacks shouldn't push themselves where they are not wanted. (Agree strongly, agree slightly, disagree slightly, disagree strongly)

White people have a right to keep blacks out of the neighborhoods if they want to, and blacks should respect that right. (Agree strongly, agree slightly, disagree slightly, disagree strongly)

Suppose there is a community-wide vote on the general housing issue. There are two possible laws to vote on (respondent reads an open and a restricted housing law). Which law would you vote for?

In general, do you favor or oppose busing of black and white school children from one district to another?

Table 4

Public Policy-Oriented Racial Attitudes 1963–1986.[a]

	Percent of Nonblack Respondents[b]			
Survey Year	Disagree That Blacks Should Intrude	Disagree w/"Rights" to a Segregated Neighborhood	Would Vote for Open Housing Law	Favor Busing
1963	22.3	44.9	---	---
1966	21.9	---	---	---
1968	20.6	43.2	---	---
1970	15.6	50.6	---	13.5
1971	---	---	---	17.8[c]
1972	31.9[c]	59.2[c]	---	19.5
1973	26.0	---	34.1	---
1974	---	---	---	20.1
1975	24.8	---	34.0	17.2
1976	28.5	59.6	34.6	15.8
1977	26.5	55.9	---	16.3
1978	---[d]	---	36.8	20.2
1980	31.1	64.8	38.9	---
1982	39.3	70.2	---	19.2
1983	---	---	44.4	23.1
1984	39.9	71.7	48.7	---
1985	38.2	72.3	---	22.0
1986	---	---	47.1	29.4

[a]All surveys conducted by the American Institute of Public Opinion (Gallup) or the National Opinion Research Center (NORC). All sampling errors ≤ 5 %. See text for actual question wordings.

[b]Over 96.2% of all nonblack respondents are white.

[c]This is the mean response from two or more surveys that asked this question in this year.

[d]The dashed line indicates that this issue did not appear in any survey during this particular year.

According to Table 4, only a little more than a third of all whites would accept the legitimacy of blacks pushing for desegregation in the face of white resistance. In other words, even in the 1980s, a sentiment of racial insularity exists among an overwhelming majority of nonblacks. Note that there has only been a slight erosion in these feelings since the 1960s and 1970s. It seems that while a majority of the white population willingly coexists with blacks in desegregated work, school, and other public settings, in reality they want as little to do with blacks as possible.

This sentiment becomes glaringly apparent when specific public policies regarding interracial contact are at issue. While the overwhelming majority would limit restrictive legislation, more than a quarter of all nonblacks would respect the "right" of whites to bar blacks from their neighborhoods, and these respondents would call for blacks to yield a similar respect. In other words, a substantial plurality of whites see nothing wrong in restrictive covenants and other limitations to free-market real estate activities that are designed specifically to preserve the racial integrity of a community.

Table 4 also shows that less than a majority of whites would vote for an open housing law that "says that a homeowner cannot refuse to sell to someone because of their color." Presumably the majority would vote for the version wherein "a homeowner can decide for himself whom to sell his house to, even if he prefers not to sell to blacks." Apparently it matters little to the quarter of the white population who would restrict blacks from living in their neighborhood, or the majority of respondents who oppose the open housing law, that the courts have long ruled housing restrictions to be both illegal and actionable (i.e. the offended parties can litigate to recover damages—including pain and suffering).

. . . a substantial plurality of whites see nothing wrong in restrictive covenants and other limitations to free-market real estate activities. . . .

Given the reluctance of whites to have blacks live among them and their desire to insulate blacks from their lives and to some extent the lives of their children, it is no wonder that only about a quarter of all whites favor interdistrict school busing. See Table 4. Such busing is the ultimate in forced interracial interaction. In this light, white people's vehement objection to busing is not in the least surprising. That such a large, yellow object can become the focus of such intense racial animosity makes perfect sense when we realize that while whites say they are willing to coexist with blacks in most public circumstances, they are much less willing to be forced (or to have their children forced) to do so.

Summary and Implications

In the minds of many whites, not all that much has changed since Hyman and Sheatsley[11] observed, "In most of the North, whites maintain a social distance from Negroes, though allowing them the legal right to use public facilities." In contemporary America many of the regional differences paramount in earlier studies of racial attitudes have dissipated—if not disappeared. Contemporary white America speaks with one voice, and, in the final analysis, it wishes to be left alone.

In the immediate future the prospects for reduction in this insularity appear dim. Since World War II most of the changes in white racial attitudes have their origins in dramatic changes in the legal and political status of blacks (e.g., the rights of equal access to public transportation, public facilities, etc.). No further dramatic changes in the legal status of blacks loom on the horizon. Moreover, while there are both normative and structural components to the evolution of racial attitude change, the former contribute more (and more slowly) than the latter.[12] Together, these realities mean that the insularity at the core of American racial attitudes is likely to persist for some time.

NOTES

[a]Before the late 1940s primitive sampling procedures governed most survey data collection. Here the period of "modern" national surveys is taken to begin with the 1948 National Election Study.

[b]Until recently even when interviewed for surveys blacks were seldom allowed to answer questions on race relations[13] because white researchers presumed they knew black response patterns. Only recently have the attitudes of blacks been systematically explored.[14]

[c]In both Gallup and NORC surveys all respondents are drawn from the noninstitutionalized adult population in the continental U.S. Thus, no respondent was in a group living situation at the time of the interview.

[d]The results here are based only on respondents with school-aged children because the earliest (Gallup) surveys did not query all respondents, only parents. Tabulations that include all respondents (not shown) yield statistically similar results.

[e]This question continues to be asked both because it serves as an introduction for the others in the series, and it provides a framework for comparison. Otherwise—based solely on its failure to produce a distribution of responses between the two categories—it would have been discarded with many others from this era.

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George Alan Russell: Jazz's First Theorist

by

Robert E. Moore

In 1953 George Alan Russell published *The Lydian Chromatic Concept of Tonal Organization.* By virtue of this work Russell carved out a unique niche for himself in the history of jazz, his opus representing the first theoretical work to come out of the jazz tradition. The purpose of this paper is to define his place in jazz history and to offer a biographical sketch off jazz's first and most important theorist. My points of departure will be references made to Russell in two widely read works—Gunther Schuller's *Early Jazz* and Wilfrid Mellers' *Music in a New Found Land.* Both works stand in need of critical commentary.

Gunther Schuller in *Early Jazz* asserts what many take as axiomatic—that jazz, as contrasted with "classical" music, is a player's or improviser's art.

> It is manifest that the basic stylistic and conceptual advances in jazz have been determined by its great instrumentalist-improvisers—Louis Armstrong, Earl Hines, Coleman Hawkins, Lester Young, Charlie Parker, Dizzy Gillespie, Miles Davis, John Coltrane, Ornette Coleman—not by Jelly Roll Morton, Duke Ellington, Theolonious Monk, John Lewis, George Russell, and Charlie Mingus.[1]

While the composer may exert an indirect influence on the improviser, a more direct influence is precluded by the virtual impossibility of an instrumentalist emulating a compositional conception that is in itself based on the collective efforts of a number of players. Although Schuller notes a "quasi-compositional conception" undergirding the styles of the great improvisers, it is the instrument and the performance that he considers of primary importance.[2]

That the improviser has played the major role in the evolution of jazz is not a proposition that this writer would attempt to refute. I do, however, feel compelled to raise a question about the adequacy of Schuller's categories, especially as they apply to one figure mentioned in that select group of composers, George Russell. Certainly Russell has distinguished himself over the years as one of the pre-eminent composers in jazz. Yet Russell is to be distinguished from the others on Schuller's list because of his theoretical interests, having produced the first original, theoretical work to emerge out of the jazz tradition. Through his theoretical work he has exerted an impact on jazz that goes far beyond his impact as a composer. Notwithstanding his compositional work, Russell has, since the formulation of the Lydian concept, defined theory as his major interest.

Although Russell's name is mentioned in most of the larger historical studies of modern jazz, only recently has he received recognition for some of the more direct ways in which he has influenced the evolution of jazz. Recent biographical studies of trumpeter Miles Davis have revealed that it was Russell who showed Davis how to compose and improvise what became labeled as "modal jazz." While the improviser-performer Davis is often credited with having initiated one of the major developments in the jazz of the 1960s through his work on such compositions as "Milestones" and "So What," it was Russell, utilizing the principles of his Lydian theory, who showed Davis how to do modal music. One of the Davis biographers, Nisenson, in describing how the trumpeter composed his landmark composition "Milestones," notes the following:

> The simple melody was an experiment inspired by an evening Miles had spent with the jazz composer-arranger George Russell, who at the time was working on his theoretical "Lydian Concept of Tonality." Basically, this was a method for the jazz composer and improviser to use modes rather than the traditional tonal chord progressions and tonally responsive melodies. Modes are actually a very old concept in western music, dating back to ancient Greece, and modal concepts were used, in different incarnations, in the primitive music of Africa and in the art music of India. Miles was fasci-

nated by Russell's approach. Here was a means of breaking free from tonal cliches—while maintaining some amount of restraint. "George," Miles told Russell that night, "if Bird were alive, this would kill him."[3]

Davis has also cited pianist Bill Evans as one who exerted a great influence on him during his modal period; Evans was in the Davis band during the modal period.[4] Evans was recommended to Davis by Russell, and it would be reasonable to propose that Russell's influence on Davis continued through Evans who had studied the Lydian concept.

While Davis's interpretation of Russell's concept marks one instance in which a composer-theorist has exerted an influence beyond that countenanced by Schuller, it was Davis who provided Russell with the initial stimulus to delve into theoretical concerns. It was a remark made by Miles in the mid-1940s, that he wanted to learn all the changes, that sparked in Russell the desire to learn all the scales. Russell saw this project as one complementary to Davis, given the fact that one of the main tasks of the jazz improviser is to convert chord symbols into scales, creating melodic lines that convey the sound of the chord.

Russell immersed himself in his chosen task during a long period of confinement for tuberculosis in a New York hospital in 1945 and 1946. There he spent most of his hours at the piano in the sitting room matching chords to scales, enduring the complaints of fellow patients who tired quickly of his incessant piano playing. It was during this time that Russell hit upon the idea that the Lydian scale (e.g., C D E F# G A B) conveyed the sound of a major chord (C E G) better than the traditional major scale (C D E F G A B). The experimentation with the Lydian scale was, he notes, inspired by the practice of Dizzy Gillespie, Charlie Parker, et al, of utilizing the flatted fifth of major chords. These musicians were the creators of the so-called "BeBop" music.

Out of the hospital in 1947, Russell composed one of the first Afro-Cuban jazz numbers, "Cubano Be, Cubano Bop," for the Dizzy Gillespie Orchestra, employing one of the techniques derived from the developing Lydian theory. His introduction was based on a single Lydian chromatic scale, departing from the traditional practice in which chords provide the foundational elements. While Russell continued his activity as a composer-arranger in the late 40s, the call of his theoretical muse led to his withdrawing from the music world in the early 50s. He took a day job at Macy's and devoted his free hours to the completion of his concept of tonality.

In 1953 Russell published *The Lydian Chromatic Concept of Tonal Organization*, the first theoretical work to be written by a jazz musician. His opus was not offered as a prescriptive text, i.e., one that attempted to legislate a particular taste or style. The significance of his work was its attempt to apply an Ockham's razor to music theory, to generate a *descriptive* theory that offers the instrumentalist-composer the full range of options and possibilities lying within the universe of equal temperament. In the introduction of his book, Russell asserts the following:

> The Lydian Chromatic Concept is an organization of tonal resources from which the jazz musician may draw to create his improvised lines. It is like an artist's palette: the paints and colors, in the form of scales and/or intervalic motives, waiting to be blended by the improviser. Like the artist, the jazz musician must learn the techniques of blending his materials.
>
> *The Lydian Chromatic Concept of Tonal Organization* is a chromatic concept providing the musician with an awareness of the full spectrum of tonal colors available in the equal temperament tuning. There are no rules, no "do's or don'ts." It is, therefore, not a system, but rather a view or philosophy of tonality in which the student, it is hoped, will find his own identity.[5]

. . . Russell carved out a unique niche for himself in the history of jazz, his opus representing the first theoretical work to come out of the jazz tradition.

From the basic principle formulated during his hospital confinement, Russell had moved on to devise a scale that offered the full range of tonal colors, which could be used in shaping melodic lines as well as harmonies. Out of the material provided by the Lydian chromatic scale, his book demonstrates how one can derive all of the major categories of chords and scales. The upshot of this chromatic view is that *all* chords and scales built on each of the twelve chromatic tones are related, the connecting link being described by the circle of fifths.

One of the practical ramifications of Russell's view is mentioned by trumpeter Art Farmer, who studied the concept in the mid-50s. Farmer asserts that studying with Russell engendered the view that there are no wrong notes, that one might justify the use of any note within the parameters of tonality. Farmer also makes note of a demonstration by Dizzy Gillespie that antedated his studying with Russell. Gillespie, he relates, played a variety of triads in a chromatic fashion over a single pedal point. "All of them," according to Farmer, "sounded bright."[6] What Russell accomplished, as Farmer im-

plies, is the development of a systtem that formally explains Gillespie's point about chromaticism.

Recent biographical studies of trumpeter Miles Davis have revealed that it was Russell who showed Davis how to compose and improvise what became labeled as "modal jazz."

Russell describes his theory as being in part a codification of the techniques and intuitive principles that have been developed by the jazz improviser over the course of the history of jazz. The influence of the flatted fifths of the beboppers has already been noted. But nowhere is this aspect of Russell's thesis more evident than in his defining, in Lydian concept terminology, the two basic approaches to improvisation—the vertical and the horizontal. Coleman Hawkins's style represents the paradigm of vertical playing in which the improviser addresses each passing chord, playing a melody that best conveys the sound of the chord. Lester Young offers the paradigm of the horizontal style. Where Hawkins responds to each chord, Young tends to bypass chords in favor of what Russell calls "tonic stations." In Young's system, tonic stations are often defined by determining what the resolving tendency of two or more chords might be. Take, for example, the following series of chords: Fm7 Bbm7 Eb7 Abmaj. Where Hawkins would address each chord as it appears, Young might go to Abmaj, imposing an Ab blues scale on the preceding progression of chords. In the vertical approach, scales color chords. In the horizontal approach, chords color scales.

In his 1953 work Russell was to anticipate in Lydian terms what was to be the next major revolution in jazz. He spells out what he describes as the "outgoing," chromatically enhanced, horizontal approach, which found its practical realization in the work of Ornette Coleman. What Coleman introduced was an approach to tonality in which the improviser might relate to just one tonic center, for example, the key of the music, or proceed freely by selecting tonic centers on the spur of the moment. The Lester Young approach is thus taken to its outer chromatic limits. Coleman studied with Russell in 1959 at the School of Jazz in Lenox, Massachusetts. Although he had already arrived at his horizontal style by this time, one cannot help but note that the basic principles of this style were spelled out by Russell in 1953.

Russell had an influence on figures outside of the jazz domain as well. Indiana University professor David Baker represents one whose work spans both the jazz and European classical and symphonic traditions. Baker, who studied with Russell at Lenox, is the author of a widely used series of textbooks on improvisation, and his approach is based on the Lydian concept.[7]

During Russell's extended stay in Scandanavia in the late 1960s he had a marked impact on both jazz and non-jazz European musicians. Among the latter was the leading Norwegian "art" music composer Kora Kolberg. Russell, Kolberg asserts, exerted a profound influence on the younger Norwegian composers who, like himself, were looking for an alternative to the elitist, atonal approach of the avant-garde. What they found in the Lydian concept was "a new way of looking at tonality which was not bound by the timeworn, traditional major-minor approach."[8] This infusion was a central element in the creation of a music that sought once again to embrace the listener. The respect for Russell's work among the non-jazz composers was also evidenced by his being commissioned to compose his "Electronic Sonata for Souls Loved by Nature" by Ny Musikk, the Norwegian branch of the International Society for Contemporary Music.

Now that Schuller's failure to consider Russell's place as a *theorist* in jazz history has been addressed, in the second part of this paper I will correct an error in the scholarship of authors such as Wilfrid Mellers in his *Music in a New Found Land.* The error to which I allude can seriously impair one's understanding of the social, cultural, and aesthetic background out of which the Lydian concept evolved.

In Mellers' book one finds the following statement:

> More creatively vigorous than the academically trained jazz composers who stem from the manner of the Modern Jazz Quartet is George Russell, a highly sophisticated musician who has become guide and mentor to "advanced" developments. As a *white* [emphasis mine] man he has tried to do what Cecil Taylor attempted as a coloured man: and has, perhaps, failed for a reason that complements Taylor's failure. In Taylor's case the compositional elements that were supposed to discipline the primitivism did not convince, and this made the primitivism itself seem suspect.[9]

In the case of the "white" Russell, the situation is reversed: "the explosion of jazz license (read "primitivism") . . . sounds the most 'thought up'."[10]

While this writer wishes to make no claim about the scientific cogency of ways of reckoning race in the United States, Russell's birth certificate reads "Negro." Born in Cincinnati, Ohio, on June 23, 1923, his biological father was a white Oberlin College music professor; his mother a black Oberlin undergraduate. He was adopted a year later by Joseph

Russell, a railroad chef, and his wife Bessie, a registered nurse, and raised in the Walnut Hills section of Cincinnati. Whether race is considered biologically or sociologically, existentially Russell was black. Nothing drives this point home more clearly than his experience as a seriously injured, six-year-old, hit-and-run victim, who was barred from admission to the Jewish Hospital by a nurse who refused to admit him because he was "colored."

The environment in which Russell grew up was one in which black music—sacred and secular—was ubiquitous. Although his mother attended Mt. Zion Methodist Church, whose congregation included a number of Cincinnati's black elite, young George was particularly attracted to the music he heard at the sanctified church near his home and at the revival meetings that he was taken to by his mother and Bishop Mary Mack (a popular midwestern evangelist in the 1920s and 30s, whose son was Russell's playmate).

The experimentation with the Lydian scale was, he notes, inspired by the practice of Dizzy Gillespie, Charlie Parker, et al., of utilizing the flatted fifth of major chords. These musicians were the creators of the so-called "BeBop" music.

Russell's first attraction to jazz came as a young child when he heard the legendary Fate Marable's band on riverboat excursions. Famed arranger Jimmy Mundy was a Kerper Street neighbor. Cousins of Art Tatum lived on the terrace behind the Russells's house, and George could hear the redoubtable pianist practice whenever Tatum was in town. Zack Whyte, leader of the popular Chocolate Beau Brummels, lived but a block away. Two blocks away were Duffy's Tavern and the Avalon Club where many famous musicians played or came to relax. And three blocks away was the Manse Hotel where many of the top stars, barred from downtown hotels, stayed.

George's first display of musical ability came through his performances as a boy soprano when he was frequently called upon to sing at his family's church and at social club programs. At the age of ten he shared billing with Fats Waller in a program at the local YMCA. His interest in vocal music continued through his adolescent years as he and three high school buddies formed a quartet that sang modern harmony and made appearances in southern Ohio and Indiana. He also sang in the Withrow High School Glee Club and later in the Wilberforce University Glee Club.

It was, however, the drums that really drew Russell's interest. This interest first manifested itself in his participation in the Boy Scouts Drum and Bugle Corp. At the age of 13 his parents purchased a drum set, and, with the encouragement and tolerance of a loving mother who turned over her living room to him, George set about teaching himself how to play. In time he learned the fundamentals, and he began to listen to and closely watch the older boys and men who played around the neighborhood.

By the age of 14 Russell's interest in music, coupled with his adolescent interest in exploring the adult world, took him far beyond the boundaries of Walnut Hills. He began making the long four mile trek down Gilbert Avenue to downtown Cincinnati and the Cotton Club. Although "Cotton Clubs" were to be found in just about every American city with a sizable black population, Cincinnati's was known throughout the black entertainment world. Jimmy Lunceford, Cab Calloway, Earl Hines, Andy Kirk, and others of that stature appeared there. The Cotton Club became school for George as his attendance at Withrow High School dropped precipitously. Finally, at the age of 16, George dropped out of high school and began working at a downtown department store in the day and playing at night.

Racism and racial discrimination played a most important part in Russell's life, as it did in the lives of most of his peers. Interviews conducted with some of his early associates—musical and others—revealed that racism cut quite deeply into all of their lives. Every interviewee had a collection of horror stories to tell. George recalls being pushed down the hall by the gym teacher at the Hoffman School who yelled at him, "You ain't nothing but a nigger." He was discouraged from participating in the high school band. He walked out of class and out of Withrow High School for the last time when he was ordered by his English teacher to read the racially derogatory monologue of a stereotypical slave.

Russell's contact with formal education did not end, however, with his exit from Withrow High School. A little over a year later, he was offered a scholarship to attend the preparatory high school department of Wilberforce University. He had by that time developed into one of the better drummers in Cincinnati. The drummer in the college's dance band—the Wilberforce Collegians—had dropped out, and George was selected as his replacement. It was at Wilberforce that he received his first formal instruction in music from Professor Anna Terry, mentor to a long list of distinguished African-Americans. About Russell, Professor Terry related: "When he came to me he didn't know a thing . . . what a staff was. I had to teach him all of the fundamentals."[11]

Russell left Wilberforce before receiving his diploma, eventually landing the drummer's chair with the highly-regarded Benny Carter and his orchestra in 1943. It was during this period that he made the decision to put his drums aside and take up the com-

poser-arranger's pen. The event that led to that fateful choice was the fact that Max Roach took the job with Carter away from Russell. Evaluating his skills and stacking them up against the amazing Roach, Russell quickly concluded that he was no match for the latter and that his life's work lay elsewhere.

Russell learned the rudiments of arranging from a friend, the gifted bassist Harold Gaston, while both were confined in a Cincinnati sanitarium. Soon he was to do an arrangement for his former boss, Carter. Shortly after that, in 1944, he was arranging for the Earl Hines Band in Chicago. The conversion was now complete.

Eventually Russell was drawn to New York by the new music being played there. By 1945 he was back in the hospital. Once again his confinement marked a crucial period in his musical development. While at St. Joseph's Hospital in the Bronx, he evolved the principles of the Lydian chromatic concept of tonal organization.

Recent years have witnessed a wider recognition of Russell as a composer and band leader. He landed a contract with Blue Note Records in 1980. This was his first contract with an American record company in close to two decades. Along with wide critical acclaim for his music, his Blue Note album *African Game* received a Grammy nomination, and his Living Time Orchestra has appeared at major festivals and concerts in the United States and abroad. Notwithstanding the marked increase in such activities, he remains heavily immersed in his academic and theoretical work. He continues to teach privately at the New England Conservatory of Music. Work on a second volume of the Lydian chromatic concept of tonal organization and the development of a way of schematizing rhythm have been some of his major concerns of late. All in all, it seems clear that jazz's first theorist will continue to exert a broad influence, both unique and profound, on modern music.

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